

This listing of claims will replace all prior versions, and listings, of claims in the application.

LISTING OF CLAIMS:

Claim 1 (Original). An interconnect structure comprising:
at least one conducting metal feature formed atop a substrate;
at least one interlayer dielectric layer surrounding said at least one metal feature; and
a ceramic diffusion barrier, between said at least one interlayer dielectric layer and said at least one conducting metal feature, having a composition $\text{Si}_v\text{N}_w\text{C}_x\text{O}_y\text{H}_z$, where $0.1 \leq v \leq 0.9$, $0 \leq w \leq 0.5$, $0.01 \leq x \leq 0.9$, $0 \leq y \leq 0.7$, $0.01 \leq z \leq 0.8$ for $v + w + x + y + z = 1$.

Claim 2 (Original). The interconnect structure of claim 1 wherein said ceramic diffusion barrier has a dielectric constant less than about 3.3.

Claim 3 (Original). The interconnect structure of claim 1 wherein said ceramic diffusion barrier further comprises a line level dielectric layer.

Claim 4 (Original). The interconnect structure of claim 1 wherein said ceramic diffusion barrier further comprises a line level dielectric layer and a via level dielectric layer.

Claim 5 (Original). The interconnect structure of claim 1 wherein said at least one interlayer dielectric layer further comprises a line level dielectric layer having a first composition and a via level dielectric layer having a second composition, where said first composition is different from said second composition.

Claim 6 (Original). The structure of claim 1 wherein said at least one interlayer dielectric layer has a composition comprising air or inert gas.

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Claim 7 (Original). The interconnect structure of claim 1 wherein said at least one interlayer dielectric layer has a composition comprising $\text{Si}_v\text{N}_w\text{C}_x\text{O}_y\text{H}_z$, where $0.05 \leq v \leq 0.8$, $0 \leq w \leq 0.9$, $0.05 \leq x \leq 0.8$, $0 \leq y \leq 0.8$, $0.05 \leq z \leq 0.8$ for $v+w+x+y+z=1$.

Claim 8 (Original). The interconnect structure of claim 1, further comprising a lining metal containing barrier, where said lining metal containing barrier forms an interface between said at least one conductive metal feature and said at least one interlayer dielectric layer, where said lining metal containing barrier comprises tantalum, tantalum nitride, tungsten, titanium, titanium nitride, ruthenium, TiSiN, or combinations thereof.

Claim 9 (Original). The interconnect structure of claim 4, wherein said at least one dielectric layer further comprises a dielectric etch stop layer positioned between said line level dielectric layer and said via level dielectric layer.

Claim 10 (Original). The interconnect structure of claim 1 wherein said ceramic diffusion barrier has a composition of $\text{Si}_{0.16}\text{N}_{0.17}\text{C}_{0.17}\text{H}_{0.5}$.

Claims 11- 20 (Cancelled)

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